

**ANTIOXIDANT ACTIVITY AND PHOTOCHROMIC PROPERTIES OF 2,6-BIS(2,4-DIHYDROXYBENZYLIDENE)CYCLOHEXANONE**

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**Abstract**

Xanthylium derivatives have attracted considerable interest due to their potential health effects and replacement of synthetic pigments. Moreover, these type of compounds exhibit versatile photochromic properties by switching from a variety of colors when submitted to external stimuli (light, temperature, pH). Generally, all these compounds hold the same xanthylium core and follow the same pH-dependent network of reversible chemical reactions as structurally related families such as flavylium [1-4].

In the present study we focused the attention on the isolation and characterisation of the species involved in the network of chemical reactions of 2,6-bis(2,4-dihydroxybenzylidene)cyclohexanone. The pH-dependent photochromic behavior of the xanthylium derivative has been investigated. In order to identify the species, the NMR spectra were recorded in acidic and basic media. The antioxidant activity was also determined using DPPH assay [5]. The IC<sub>50</sub> values of radical scavenging activity for DPPH were found to be 133.68 µg/mL.

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**References**

- [1]. F. Pina, M. J. Melo, C.A.T. Laia, A.J. Parola, J.C. Lima, Chem. Soc. Rev. 41 (2012) 869.
- [2]. A.M. Diniz, C. Pinheiro, V. Petrov, A.J. Parola, F. Pina, Chem. Eur. J. 17 (2011) 6359.
- [3]. A.M. Pana, V. Badea, R. Banica, A. Bora, Z. Dudas, L. Cseh, O. Costisor, Photochem. Photobiol. A: Chem. 283 (2014) 22.
- [4]. L.N. Corici, S. Shova, V. Badea, D. Aparaschivei, O. Costisor, L. Cseh, Photochem. Photobiol. Sci. 16 (2017) 946.
- [5]. P. Gurumoorthy, A.K. Rahiman, Med. Chem. Res. 24 (2015) 2441.